

ABSTRACT OF THE DISCLOSURE

Techniques for automatically generating three dimensional geometric circuit models from a computer aided design (CAD) of a light emitting diode (LED) device. The models may comprise a robust netlist that may be executed using circuit simulation packages. The spatial positioning of each element in the design is preserved during simulation, such that simulation output data can be used to reconstruct a geometric rendition or map of the electrical current flowing through the LED device. The output data from the circuit simulation may then be used to reconstruct a three-dimensional rendition of the current spreading uniformity across the design and a quantitative value for the uniformity may be obtained. Using the present techniques, a designer can predict the current spreading uniformity for any particular LED layout, isolate and correct current crowding areas, and reevaluate the design to meet uniformity specifications.